IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

PRINCETON DIGITAL IMAGE CORPORATION,	))
PLAINTIFF,	)))
v.	))
HEWLETT-PACKARD COMPANY, FUJIFILM NORTH AMERICA CORPORATION F/K/A FUJIFILM U.S.A., INC. AND XEROX INTERNATIONAL PARTNERS,	))))) CASE NO.: 1:12-CV-00779-RJS
DEFENDANTS.	))))

PLAINTIFF'S RESPONSIVE CLAIM CONSTRUCTION BRIEF

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Plaintiff Princeton Digital Image Corporation ("PDIC") submits this brief in response to Defendants' opening claim construction brief (D.I. 323) addressing disputed terms for U.S. Patent Nos. 4,813,056 (the "'056 Patent") (attached hereto as Ex. A) and 4,860,103 (the "'103 Patent") (attached hereto as Ex. B).

I.   INTRODUCTION

Using the excuse that the claims of the patents are "exceedingly complex," Defendants rewrite clear claim language, add unsupported and redundant limitations, rely on expert testimony that contradicts the specifications of the patents, and pluck claim terms out of context so that they can say that no one could possibly understand them. Defendants' arguments are riddled with errors that violate basic claim construction tenets, the most important of which is that a proper claim construction is not performed in a vacuum. The claims themselves, the specification and the prosecution history form the intrinsic record that provides the context in which the claims must be construed.[1] Extrinsic evidence, such as expert testimony, can be helpful, but it cannot supplant the intrinsic record. In fact, extrinsic evidence that is at odds with the intrinsic record or that is conclusory should be rejected altogether.[2]

Defendants complain about "complexity" because they would like the Court to believe it has to construe everything[3] and, in doing so, redraft the claims to cover apparatuses and methods that have nothing to do with what the inventors actually invented[4]. But that is not the proper role

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[1] *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314-17 (Fed. Cir. 2005)(en banc).

[2] *Id.* at 1318 ("conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court. Similarly, a court should discount any expert testimony 'that is clearly at odds …with the written record of the patent.'") (internal citations omitted).

[3] *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) ("district courts are not (and should not be) required to construe every limitation present in a patent's asserted claims").

[4] *Phillips,* 415 F.3d 1303 at 1316 ("the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented") (quotation omitted).

of the Court in claim construction. A claim construction provides clarity and assists the jury, and it does so in a manner that is supported by the intrinsic record and aligned with the actual invention. Even if the claims were "exceedingly complex," it is not an excuse to rewrite them by replacing understandable words with other words, adding words that are redundant of other claim language, importing unnecessary limitations from embodiments described in the specification, or imparting special meanings to terms that one skilled in the art might understand in a particular context, but that are plainly inconsistent with the context provided by patents. And, it certainly is not an excuse to redefine the invention. PDIC's constructions adhere to these claim construction tenets. Defendants' constructions do not.

II.   DISPUTED CLAIM TERMS

A.   The '056 Patent

1.   Preambles—(JCCS Term 1 (Claim 13); Term 15 (Claim 14); Term 23 (Claim 18); Term 31 (Claim 21))

The parties agree with respect to one issue for the preambles: The term, "a digitized signal," provides antecedent basis for "said signal" or "said digitized signal" recited in the bodies of those claims. But, it does not follow (as Defendants suggest) that this antecedent basis necessitates that the entirety of "the claim preambles are limiting." D.I. 323 at 18.

Defendants' brief fails to fully explain how or why the preambles limit the scope of the claims. Defendants broadly state that "[w]ithout these definitions [of signal conditions] in the preambles, the claims lack a necessary structure that all other elements depend on." *Id*. However, Defendants make no attempt to identify what necessary structure is lacking or why "all other elements" would depend on such structure. Defendants fail to do so because they cannot. Where, as here, "the body of the claim describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention . . .

the preamble is generally not limiting." *Intirtool, Ltd. v. Texar Corp.*, 369 F.3d 1289, 1295 (Fed.

Cir. 2004) (internal citation omitted). Defendants have not offered any reason why this general

rule would not apply.

The bodies of claims 13, 14, 18, and 21 recite structurally complete inventions without

the preambles. D.I. 325 at 8-10. Specific limitations on "the signal" and all other limitations

necessary to the claims are provided in the bodies of the claims themselves.

2.   **"condition[s]" / "signal condition[s]" / "signal value[s]" / "values of said signals"**— (JCCS Term 2 (Claims 13, 14, 18, 21); Term 3 (Claims 13, 14, 18, 21))

PDIC's construction[5] for the "condition" and "value" terms follows their express

definition in the specification. In contrast, Defendants seek to add the limitations "one unique"

and "of a signal" that are unnecessary. In fact, "one unique" appears nowhere in the

specification with respect to its description of conditions or values. When the claims require

limitations on these terms beyond that provided by the express definition, those limitations are

provided by the claim language itself. For example, Claim 14 requires:

> a first plurality of codewords representing a first plurality of signal conditions, ***each codeword representing a different condition***

If Defendants' construction were adopted, Claim 14 would become:

> a first plurality of codewords representing a first plurality of ***multiple one unique states or values of a signal***, each codeword representing a different ***one unique state or value of a signal***

Defendants fail to explain how this result could possibly be useful to a jury or how the addition

of "one unique" or "of a signal" provides clarity or removes ambiguity. If anything, Defendants'

proposal transforms understandable claim limitations into confusing ones.

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[5] Defendants indicate in their brief that PDIC proposed that these terms carried an ordinary meaning and that no construction is necessary. PDIC assumes that this was simply a clerical error in Defendants' brief. PDIC has consistently urged that a "condition" is a "state or value"; "signal condition" is "state or value of a signal"; and "signal value" is "state or value of the signal."

PDIC's construction is consistent with the specification and should be adopted.

3.   "codeword[s]" / "word[s]"—(JCCS Term 5 (Claims 13, 14, 18, 21), Term 6 (claims 13, 14, 18, 20, 21, 23)

Defendants urge an "ordinary meaning" of "codeword" as allegedly understood by the skilled artisan, yet take a position that cannot be reconciled with the specification.   Here, Defendants rely on Dr. Ebrahimi's declaration to support their argument that a codeword must be "an indivisible unit." D.I. 323 at 20. While Dr. Ebrahimi's Declaration may provide examples of coding schemes that do use indivisible codewords, the coding scheme that is described and claimed in the '056 Patent plainly does not. Supp. McAlexander Decl. at ¶¶ 10-14. Namely, the '056 Patent describes and claims a second group of codewords that each include a common codeword portion and a suffix codeword portion. D.I. 325 at 10-11. Moreover, the intrinsic record is clear that both the common codeword portion and the suffix are themselves codewords. *Id.* The codewords of the second group are divisible into at least two other units of the coding scheme: a common (shared) codeword and a suffix codeword. While an expert's testimony may assist the court, where (as here) that testimony contradicts the intrinsic record, it should be rejected. *Phillips*, 415 F.3d at 1318.

All of Defendants' arguments fail to recognize that the '056 Patent explicitly provides for a coding scheme where a codeword can be divisible into other units, but still represent a different condition. Namely, the '056 Patent discloses a scheme that applies a coding rule where a special code (*e.g.*, the common codeword) indicates to the coder that the overall codeword includes both the common codeword and a suffix codeword. Each overall codeword that is formed in this manner represents a different condition. *See, e.g.,* Ex. A at Table IV (showing that the overall codewords represent over 200 different conditions).

Defendants' complaint concerning any confusion about the difference between singular and plural codewords is nonsense. A jury would understand that the '056 Patent discloses a coding rule where codewords can be made up of portions that themselves are codewords.

With respect to the prosecution history, Defendants mischaracterize the record when they suggest that PDIC argued that each codeword represents a "*single* condition." D.I. 323 at 21. All arguments concerning the Cox reference dealt with whether each of Cox's codewords represent a "*different* condition." D.I. 323-6 at pp. 2-3. The '056 Patent's second group of codewords (which each include a common codeword and a suffix codeword) each represent a different condition. Ex. A at Table IV.

Defendants' construction also is at odds with the claims, which are explicit about what the codewords represent, none of which refer to "one unique state of a signal." D.I. 325 at 11.

No construction of this term is required. "Codeword" has an ordinary meaning that is readily understood in the context of the '056 Patent and the claims. A "codeword" represents other information. D.I. 325 at 10-11. The claims are explicit about what that other information is.

4.   "first means responsive to said signal for generating a first set of codewords…"— (JCCS Term 4, Claim 13)

PDIC has correctly identified the function as "generating a first set of codewords." Defendants' complaint about PDIC's identified function is based on the erroneous assumption that PDIC's construction precludes the structural language that describes the codewords from limiting the scope of Claim 13 in a meaningful manner. The characteristics of codewords that are recited in Claim 13 does limit its scope, and thus Claim 13 does not encompass "any random set of codewords," as feared by Defendants. However, the structural language is not part of the *function* of generating (*i.e.*, "outputting") the codewords. D.I. 325 at 11-12.

With respect to the meaning of "generating," Defendants' attempt to use independent Claim 18 falls short. Unlike Claim 13 (and Claim 1), Claim 18 does not recite a "means for generating." Rather, Claim 18 is a method claim that takes a different approach to claiming the invention that is disclosed in the '056 Patent. The fact that the drafter used "output" instead of "generate" in independent Claim 18 reflects this different approach to claiming the invention. *Hormone Research Found. v. Genentech, Inc.*, 904 F.2d 1558, 1567 n.15 (Fed. Cir. 1990) ("It is not unusual that separate claims may define the invention using different terminology, especially where (as here) independent claims are involved."). It does not compel the conclusion that "generating" in the context of independent Claim 13 cannot mean "outputting."

With respect to the word "set," Defendants complain that the specification does not discuss outputting a set of codewords. D.I. 323 at 23. That is incorrect. While codewords may be output one at a time, that does not mean that the memory cannot output a *set* of codewords. For instance, the specification discloses that "any *portion* of the table [of codewords] can be transmitted," meaning that outputting of codewords is not limited to just an individual codeword. Ex. A at 6:8-9. Further, encoding a signal having a plurality of conditions would result in outputting a plurality (or set) of codewords that represent the signal.

With respect to the corresponding structure, Defendants argue that if the Court construes "generating" as "creating a set of codewords," then the claim is indefinite because the specification allegedly does not disclose sufficient structure. Here, Defendants rely on an Examiner's statement that "Table V does not show how the codewords are generated," but omit to tell the Court that the Examiner was rejecting a claim that recited "codewords are generated *as set forth* in Table V." D.I. 323 at 23; D.I. 323-7 at p. 3. *But see* Ex. F, '056 File History at original Claim 13. While Table V may not *set forth* how the codewords are generated, this does

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not mean that the '056 Patent does not disclose a technique for creating codewords that can be used in its encoding scheme. Indeed, one skilled in the art would understand from the '056 Patent how to create codewords. *See* Supp. McAlexander Decl. at ¶¶ 23-24.

However, "creating" codewords is not a proper construction of the function recited in Claim 13. Defendants redefine the invention in this manner so that they can then complain that the specification does not adequately describe it. What the specification does describe is "outputting." *See* D.I. 325 at 12. The structure that PDIC has identified as corresponding to this function is a memory device and not, as Defendants contend, the codeword tables themselves or the addressing logic which is separate from the memory device. Indeed, as explained in PDIC's opening brief, neither the codewords nor the addressing logic perform the function of "outputting codewords." D.I. 325 at 14. Rather, the memory device output circuitry performs the function of outputting codewords because that circuitry accesses and outputs the codewords stored in the storage elements. *See* Supp. McAlexander Decl. at ¶ 19.

5.   **"more commonly occurring zero run length values and non-zero values**"—(JCCS Term 9 (Claim 13))

Defendants take this phrase out of context in an attempt to demonstrate that it is indefinite. Both the claim language and the specification provide the context that establishes the bounds of this phrase. For instance, where Claim 13 requires a first set of "more commonly occurring" values, it also requires a second set of "less commonly occurring" values. Thus, when viewed in its ***entirety***, Claim 13 itself defines the relative relationship between the two sets of values that Defendants contend is missing. This relative relationship is also described extensively in the specification, which describes a statistical encoding scheme where conditions are divided into two groups based on their probabilities of occurrence. *See, e.g.,* Ex. A at Fig. 4. Given this context, "more commonly occurring zero run length values and non-zero values" in

Claim 13 are the conditions assigned to the codewords in the first set, and these values occur more commonly than the "less commonly occurring" conditions assigned to codewords in the second set. D.I. 325 at 15.

Defendants' insistence on an absolute boundary (*i.e.*, a numerical value or quantity) on the relative relationship is misplaced. A claim is indefinite only if one skilled in the art would not understand the claim to have a meaningful scope, not whether the claim provides an absolute limit. *See Deere & Co. v. Bush Hog, LLC,* 703 F.3d 1349, 1360 (Fed. Cir. 2012) (finding that "easily" did not render claim indefinite when view in the context of the intrinsic record). Claim 13 does have a meaningful scope. The more commonly occurring conditions are assigned to the first set and the less commonly occurring conditions are assigned to the second set.

Both the specification and Defendants' expert demonstrate that one skilled in the art would know how to divide conditions into more commonly and less commonly occurring sets. A goal of the invention of the '056 Patent is to reduce codeword length. Ex. A at 2:56-60; *see also* Ebrahimi Decl. (D.I. 324) at ¶ 41. If longer codewords are tolerable, then an increased number of conditions can be assigned to the more commonly occurring set of conditions. If shorter codewords are needed, then fewer conditions should be assigned to the more commonly occurring set. One skilled in the art would understand that the choice of an acceptable code length (and thus the number of conditions to assign to the more common set) is influenced by practical factors, such as the capabilities of the hardware. Ex. A at 5:57-60; *see also* Ebrahimi Decl. (D.I. 324) at ¶ 35 ("variants of Huffman codewords ***have been frequently used*** in which only Huffman codewords are produced for most frequent messages") (emphasis added), & ¶ 41. The specification teaches that longer codewords "cause complexity in the hardware" and make "the system more costly and inefficient." Ex. A at 5:57-60. The specification provides a specific

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example of a dividing line where the codewords in the first set have a maximum length of 10 bits. *Id*. at Tables I, II. Thus, the dividing line between the two sets will vary as a matter of design choice, based on practical considerations and standard engineering principles, all of which is within the capability of the skilled artisan. Supp. McAlexander Decl. at ¶¶ 24-31.

Defendants' reliance on *Storm Products* is misplaced. There, a "large number of bowlers" was held indefinite because determining "large" required a relationship to an ***undefined*** reference. *Storm Products, Inc., v. Ebonite Intern., Inc.*, 2009 WL 2147209, *5-9 (D. Utah 2009), *aff'd*, 2010 WL 1838936 (Fed. Cir. 2010). Here, Claim 13 (and the specification) define the required relationship. The conditions in the first set are more commonly occurring than the less commonly occurring conditions in the second set. One skilled in the art would know where to place the dividing line between the sets for the particular application in which the claimed encoding scheme is used. Supp. McAlexander Decl. at ¶¶ 24-31.

Defendants have the burden of proof to establish that a claim is indefinite. Yet, Defendants have presented no evidence that one skilled in the art would not understand the boundaries of Claim 13, much less the clear and convincing evidence needed.

6.   "a statistical rule such that the at least generally less commonly occurring words are longest and the at least generally most commonly occurring words are shortest"— (JCCS Term 10 (Claim 13))

Defendants again analyze a term out of context to argue that it is indefinite. The claim language surrounding this phrase clearly demonstrates that the statistical rule applies to the first set of words. A statistical rule is based on probabilities of occurrence, so that it is common sense that the first set of words will include words that occur "generally less commonly" than the words in the set that occur "generally most commonly." As Defendants' own expert opined, statistical coding rules, including entropy coding techniques such as Huffman coding, were well known in the field. Ebrahimi Decl. (D.I. 324) at ¶¶ 34-35 ("[t]he idea behind entropy coding is

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to assign ***shorter codewords (in number of bits) to messages that occur more often***") (emphasis added); *see also* Ex. A at 1:50-54. One skilled in the art would understand this phrase, and Defendants have failed to present clear and convincing evidence to the contrary.

As set forth in PDIC's opening brief, this phrase does not require a separate construction as it is understandable in the context of the claim in which it appears (which is demonstrated by Dr. Ebrahimi's Declaration). Defendants' sole complaint regarding PDIC's alternative proposed construction is that it omits the term "generally."[6] D.I. 323 at 28-29. While PDIC believes that its proposal embodies this concept with its reference to a "statistical rule," PDIC has proposed an alternative construction that is aligned with the claim language: "a statistical rule such that the generally less commonly occurring words in the first set are longer than the generally more commonly occurring words in the first set." *See* Ex. G. PDIC's opening brief discusses this language when explaining why the claim term has a definite meaning and does not need to be separately construed, noting that "[t]he presence of multiple codewords [in Table V] having the same length illustrates that the 'at least generally less commonly occurring' codewords have the same length." D.I. 325 at 16; *see also* Supp. McAlexander Decl. at ¶¶ 33-34. Defendants' construction goes too far by substituting "imprecise" for "statistical." D.I. 325 at 16.

7.   "second means responsive to said signal for generating a second set of codewords…"—(JCCS Term 11 (Claim 13))

The parties' disputes concerning the identification of the function, the meaning of the function and the corresponding structure are addressed in Sec. II.A.4 above and are incorporated by reference in this Sec. II.A.7. Again, as in Sec. II.A.4, the structure that PDIC has identified as corresponding to this function is a memory device and not, as Defendants contend, the codeword tables themselves or the addressing logic which is separate from the memory device. Indeed, as

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[6] Defendants' complaint about PDIC's omission of "generally" demonstrates that Defendants understand what the term means and, thus, have no legitimate basis for arguing otherwise.

explained in PDIC's opening brief, neither the codewords nor the addressing logic perform the function of "outputting codewords." Rather, the memory device output circuitry performs the function of outputting codewords because that circuitry accesses and outputs the codewords stored in the storage elements. Supp. McAlexander Decl. at ¶ 19.

8.   "prefix keyword code"—(JCCS Term 12 (Claim 13))

Defendants attempt—through a conclusory statement by their expert—to accord a special meaning to this term that is not called for by the claim language or the specification. The foundation of Defendants' argument rests on Defendants' flawed construction of the term "codeword." As discussed above, Defendants rely on expert testimony to impart a narrowly tailored (and self-serving) definition to "codeword" that is at odds with the intrinsic record. Even setting aside the expert testimony, Defendants' proposed construction is not supported by the claim language (which, to the extent needed, recites what the codewords represent[7]) and cannot be reconciled with the intrinsic record which explicitly provides for codewords having the characteristic (*i.e.*, divisible) that Defendants attempt to exclude through their contrived construction. These fatal errors with respect to "codeword" are carried over into Defendants' constructions for "prefix keyword code" and "suffix," where they are coupled with further errors.

Starting with "prefix keyword code," Defendants parse the term and rely on their expert's opinion that one skilled in the art of coding would understand that a "prefix" is not a codeword. However, Dr. Ebrahimi neither explains this conclusion nor provides any hint as to what one skilled in the art of coding would understand a prefix to be. The Court should reject Dr. Ebrahimi's conclusory statement (and Defendants' construction) on this basis alone.

The Court also should reject Dr. Ebrahimi's opinion and the Defendants' proposed construction because both are contradicted by the intrinsic record. Regardless of whether a

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[7] *See* D.I. 325 at 11.

"prefix" alone is or is not a codeword, the '056 Patent could not be more clear that a "prefix keyword code" can be a codeword. D.I. 325 at 18. *See also* Supp. McAlexander Decl. at ¶¶ 15-18.

Defendants' contention that a "prefix keyword code" "has no usable value in the coding scheme and does not represent any specific value" also is at odds with the '056 Patent. In the coding scheme disclosed and claimed in the '056 patent, the prefix keyword code plainly has a "usable value." For instance, the keyword "implies that a special code is employed for each zero run length value for all members of the group." Ex. A at 9:68-10:1. The specification also explains that the "key codeword . . . signals a change in the coding procedure from statistical coding using the first group of codewords to the use of a different coding scheme using a codeword drawn from the second group of codewords." *Id.* at 3:8-12. The key codeword thus has a special—and usable—meaning in the coding scheme. It signals that the overall codeword of which it is a part is a member of a particular group of codewords to which a particular coding rule applies. Thus, the special nature of the key codeword does not, as Defendants incorrectly suggest, indicate that the keyword code is not a codeword. Rather, it indicates that the keyword is not a codeword ***drawn from the first group of codewords***.

With respect to Defendants' requirement that the prefix keyword code must indicate that a suffix follows, that requirement again is inconsistent with the specification and unnecessary in view of the claim language. To the extent that the claims do require a suffix, the claims include the necessary language. *Id*. at Claim 13.

If the Court determines that a construction would be helpful, PDIC's proposal should be adopted. Defendants' concern that the jury will not understand PDIC's proposal is unfounded. Claim terms are not viewed in isolation. A jury will readily understand the term "special" in the

context of the '056 Patent.   The keyword code is a special codeword that indicates that the overall codeword is a member of a group to which a different coding rule applies.

With respect to PDIC'S proposal that the prefix keyword code is "the initial portion of the codeword," this limitation is congruent with both the ordinary meaning of a prefix and the manner in which the term is used in the specification.   Defendants' concern that "almost any bit or bits of information could correspond to the initial portion of the codeword" is unfounded because, again, claim terms are not viewed in isolation.   The language of Claim 13 in which the term appears places further meaningful restrictions on the "prefix keyword code" so that it cannot simply be any bit or bits.   For instance, the prefix keyword code must be part of each codeword of the second set and it must have a length assigned according to the statistical rule with the first set of codewords.   *See* Ex. A at Claim 13.

Defendants' complaint that PDIC's construction would violate the "Huffman coding rule" yet again is unfounded.   D.I. 323 at 33.   The claims do not require a ***Huffman*** coding rule, so whether the prefix keyword code would violate the Huffman coding rule is irrelevant.

PDIC's construction is correct.   The keyword code is a special code.   It indicates whether the overall codeword is a member of the first group to which a statistical coding rule applies or a member of the second group to which a different coding rule applies.   When the keyword code is a "prefix keyword code," it is a special code that is the initial portion of a codeword.

9.   **"Suffix"**—(JCCS Term 14 (Claim 13))

Defendants' construction of "suffix" relies on Dr. Ebrahimi's conclusory statement that a suffix cannot be a codeword.   Ebrahimi Decl. (D.I. 324) at ¶ 46.   The Court should reject Dr. Ebrahimi's opinion (and Defendants' construction) based on its conclusory nature alone.

The Court also should reject Dr. Ebrahimi's statement and Defendants' proposal that a suffix is "treated differently than a codeword" because it is at odds with the intrinsic record,

which shows that a suffix can be a codeword. D.I. 325 at 19. Defendants' proposal also is not helpful, because it creates ambiguity. It is patently unclear the manner in which a suffix should be treated differently than a codeword. This ambiguity is exacerbated by the fact that the patent's coding scheme treats some codewords differently from other codewords. A statistical rule applies to codewords in the first group, while a different coding rule applies to the codewords in the second group. *Id.* at 19-20.

Defendants' proposal, which serves no meaningful claim construction purpose, lends support to PDIC's position that the term "suffix" does not need to be construed. To the extent that any limitations are required, those limitations are provided by the language of the claims.

10.   The "grouping" terms—(JCCS Term 16 (Claims 14, 18, 20, 21, 23))

Contrary to Defendants' contention, the specification does not confirm that "grouping" means "organizing together in memory." Because Defendants agree that "grouping" should be construed consistently in the claims, Claim 21 serves as well as Claim 18 (which Defendants use) in illustrating Defendants' claim construction errors. Claim 21 requires "grouping a first plurality of codewords" and "grouping a second plurality of codewords." Substituting in Defendants' construction of "grouping" yields "organizing together in memory a first plurality of codewords" and "organizing together in memory a second plurality of codewords."

The specification does not disclose *any* embodiment in which a first group of codewords are "organized together in memory" and a second group of codewords are "organized together in memory." The single table that Defendants point to as supporting their construction would not organize *together* the first codeword group in memory and also organize *together* the second codeword group in memory.[8] This flaw in Defendants' logic is plainly evident in Table V, which shows that the second group of codewords (represented by "keyword") and the special

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[8] PDIC disputes that any table represents an organization *in memory*.

codewords of Table III are intermingled with the first group of codewords. Thus, there is no "organizing together" a first group and "organizing together" a second group in even Table V. Defendants' construction cannot be correct. "Grouping" does not mean "literally a grouping of actual codewords." It means "designating as a member of a group."

Defendants' contention that "designating" is an "abstract, mental step" also is incorrect. D.I. 323 at 36. In the described embodiment, codewords are designated as members of a group through the presence or absence of bits associated with a key codeword. Ex. A at 3:7-12. The presence or absence of key bits is neither abstract nor a mental exercise.

The prosecution history also does not support Defendants' construction.   Here, Defendants attempt to create an estoppel by pointing to statements of the Examiner and then stating (incorrectly) that PDIC relied on them to "distinguish prior art."   D.I. 323 at 36. Defendants' argument is both legally unsupported and a mischaracterization of the record. An examiner's characterization of prior art references does not create an estoppel, particularly, where, as here, the applicant did not rely on those statements. *Salazar v. Procter & Gamble Co.*, 414 F.3d 1342, 1345 (Fed. Cir. 2005) ("an applicant's silence regarding statements made by the examiner during prosecution, without more, cannot amount to a 'clear and unmistakable disavowal' of claim scope").

Indeed, the *applicant's* arguments do not contain *any* reference to the Examiner's statements that are quoted by Defendants, much less mention grouping or organizing codewords together in memory. Instead, the applicant distinguished Hankamer on the basis that Hankamer does not disclose a first set of codewords having "lengths according to a statistical rule such that the at least generally less commonly occurring words are longest and the at least generally most commonly occurring words are shortest." D.I. 323-9 at p. 11. This discussion is unrelated to

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"organizing together in memory" and thus does not create the estoppel urged by Defendants.[9]

PDIC's construction of grouping should be adopted as it embodies the principles of the invention that is disclosed and claimed in the '056 Patent.

11.   "first means for grouping…"—(JCCS Term 17 (Claim 14))

PDIC's responsive arguments regarding the meaning of "grouping" are set forth in Sec. II.A.10 above and incorporated by reference in this Sec. II.A.11. The function of "grouping" the codewords does not create the structure of the codewords and, thus, the structure of the codewords is not part of the function. D.I. 325 at 24. It simply "groups" (*i.e.*, "designates as a member of a group") codewords that already have that structure.

The parties' dispute over the corresponding structure is significant.   Defendants incorrectly contend that PDIC identified the codeword tables themselves as corresponding structure by "indirectly" referencing them. D.I. 323 at 38. The only structure that PDIC has identified and that the '056 Patent clearly links to the function of "grouping codewords" (as properly construed) is found in the memory device, which is shown and described at Figure 2 (ROM 200) and column 11, lines 18-19, column 12, lines 57-64, and column 1,3 lines 53-54. This description illustrates that the memory device includes a key bit or bits (such as a "special code" (Ex. A at Table III, 11:18-19); a "keyword" (*id.* at 12:60); etc.), the presence or absence of which designates an associated codeword as a member of the second group or the first group. D.I. 325 at Ex. 7 at ¶¶ 35, 41; Supp. McAlexander Decl. at ¶ 20.

Defendants have identified more structure than is necessary to perform the "grouping" function under either party's construction. Neither the Tables, all of the actual codewords shown in the Tables, nor the logic structure for addressing the ROM 200 are structure that is required to

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[9] The Cox reference is not discussed at all in the excerpt cited by Defendants, thus leaving PDIC with no hint as to Defendants' support for an estoppel argument involving Cox. D.I. 323 at 36.

either perform the acts of "designating as a member of a group" or "organizing together" in memory. Supp. McAlexander Decl. at ¶ 20.

PDIC's structure –one or more key bits included in a memory device –should be adopted.

12.   "second means for grouping…"—(JCCS Term 18 (Claim 14))

PDIC's responsive arguments regarding the meaning of "grouping" are set forth in Sec. II.A.10 above and incorporated by reference in this Sec. II.A.12. PDIC's responsive arguments regarding whether the structural limitations on the codewords are part of the identified function are set forth in Sec. II.A.11 above and incorporated by reference in this Sec. II.A.12.

With respect to the corresponding structure, Defendants again incorrectly contend that PDIC identified the codeword tables themselves as corresponding structure. The only structure that PDIC has identified and that the '056 Patent clearly links to the function of "grouping codewords" (as properly construed) is found in the memory device, which includes a key bit or bits (such as a "special code" (Ex. A at Table III, 11:19); a "keyword" (*id.* at 12:60); etc.), the presence or absence of which designates a codeword as a member of a particular group.

For the reasons discussed above in Sec. II.A.11, Defendants' proposed structure includes too much under either party's construction of the "grouping" function.

13.   "combined frequency of occurrence"—(JCCS Terms 20, 27(Claims 14, 18, 21))

Defendants fail to explain why they believe a construction is needed for the "combined probability of occurrence" terms, stating only that "no other meaning of these terms will satisfy those claim requirements." D.I. 323 at 41. Defendants' statement is incorrect and is provided merely for the self-serving purpose of narrowing the scope of this term beyond what is called for by the intrinsic record. Indeed, Defendants provide no support for their proposition that a "combined probability" can *only* be a "sum of their individual probabilities." *Id.* at 41.

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In fact, Defendants' narrow construction is at odds with the specification, which refers to the "combined probability of occurrence" as a "group probability." Ex. A at 9:66. While the probability of occurrence of member of a group certainly could be determined by summing the individual probabilities of the group members, it could also be determined in other manners. For instance, a group probability could be determined by determining the probability of occurrence of a particular characteristic common to all group members instead of summing the individual probabilities of occurrence of each group member.

Given the intrinsic record, there is no reason to narrow the scope of this claim term so that a "combined" probability can only be a "sum of individual probabilities."

14.   "common codeword portion length" / "codeword portion length" / "codeword portion of a length"—(JCCS Term 22 (Claims 14, 18, 21))

Defendants complain that PDIC's construction fails to (1) limit the common codeword portion to being a "prefix" and (2) tie the common codeword portion to the second set of codewords. However, these two limitations are not needed.

Neither the claim language nor the specification requires that the common codeword portion must be a prefix. In fact, the specification specifically contemplates that the common codeword portion could be something other than a prefix: "Each codeword in the second group, in this example, *may include the key codeword as a prefix* codeword segment followed by a suffix codeword suffix." Ex. A at 3:12-15 (emphasis added). If the common codeword portion were always a prefix, this description would be meaningless. Moreover, with respect to the claim language, where the patent drafter intended to limit the keyword to being a "prefix," the drafter added that limitation. *See id*. at Claim 13 ("prefix keyword code").

Defendant's second complaint about PDIC's construction makes no sense. The claims in which the "common codeword portion" terms appear *already* include language that ties the

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common codeword portion to the second group of codewords. *See id.* at Claim 14 ("each code *of the second plurality* having a common codeword portion length"); Claim 18 ("*a second group* of different codewords having a codeword portion length"); Claim 21 ("the codewords *of the second group* each having the same codeword portion of a length").

PDIC's construction affords the proper scope to the term. To the extent that other limitations are required on "common codeword portion length," the claims provide them. Adding further limitations through a claim construction is unnecessary and not called for by the claim language or the specification.

15.   **"a first group of said codewords being organized statistically in a first given order…"**—(JCCS Term 25 (Claim 18))

PDIC's response to Defendants' indefiniteness argument has been addressed in Sec. II.A.6 and is incorporated by reference in this Sec. II.A.15. Supp. McAlexander Decl. at ¶ 36.

Defendants further assert that Claim 18 is indefinite because it includes "an apparatus limitation within a method claim." D.I. 323 at 43. Defendants' reliance on *IPXL Holdings* for this proposition is misplaced. That case dealt with an apparatus claim that required both a structural element (*i.e.*, an "input means") and that a user actually use the structural element. The court held the claim indefinite on the basis that it was unclear whether infringement would occur when an apparatus is created that would allow the user to use the input means or when the user actually uses the input means. *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005).

Here, Claim 18 is a method claim that includes structural limitations. Claim 18 is distinguishable from the apparatus claim in *IPXL Holdings* because, here, there is no confusion as to when infringement occurs. Infringement occurs when the method of grouping codewords is performed with codewords that have the structural limitations recited in Claim 18. *See*

Microprocessor Enhancement Corp. v. Texas Instr., Inc., 520 F.3d 1367, 1374-75 (Fed. Cir. 2008) (distinguishing a method claim with structural limitations from *IPXL Holdings*).

With respect to whether "group" should be construed consistently with "grouping," PDIC's construction of "grouping" is addressed in Sec. II.A.10 above. The term "group" itself does not require construction (as Defendants suggest) because it has an ordinary and understandable meaning that is clear in the context of Claim 18.

16.   **"a second group of different codewords…"**—(JCCS Term 26 (Claim 18))

PDIC's claim construction and indefiniteness arguments with respect to this phrase have been addressed in Secs. II.A.6 and II.A.15 and are incorporated by reference here. *See also* Supp. McAlexander Decl. at ¶ 37.

The remaining dispute regarding the meaning of this phrase involves Defendants' construction of "next adjacent codewords." Defendants' construction is incorrect because it requires that codewords be "stored" in memory in a particular order. Neither the claims, specification, nor prosecution history requires an ordering in the manner in which codewords are physically stored in memory. Claim 18 requires only a statistical organization, which is logically illustrated in Tables I-V of the '056 Patent. Defendants' also misrepresent the prosecution history when they state that "applicant argued that, in Hankamer, the prefix is *stored* at the end of the table." D.I. 323 at 44. The discussion of Hankamer addressed only *logical* orderings in *tables*, not physical storage locations in memory. D.I. 323-9 at 9-10. Defendants' construction, which requires that codewords be "stored" next to each other in memory, should be rejected.

17.   **"causing a memory means in response to the conditions of said digitized signal applied as an input thereto to output that codeword corresponding to the input digitized signal condition"**—(JCCS Term 28 (Claim 18))

Defendants' complaint about PDIC's construction and their argument in support of their construction both are unclear. PDIC offered a construction of this phrase simply to clarify the

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meaning of "memory means." The remainder of PDIC's construction mirrors the claim language

and, thus, PDIC would agree with Defendants that "[t]his is a simple claim phrase that should not

even require construction." D.I. 323 at 45. Defendants' construction deviates significantly from

the claim language, requiring the memory device to "receive[] the digitized signal as an input,"

where Claim 18 requires that the memory device act "in response to the conditions of said

digitized signal applied as an input thereto." Defendants' construction should be rejected.

B.   **The '103 Patent**

1.   **"a video input for receiving analogue video signals directly from a camera"**—(JCCS
Term 1 (Claims 1, 11))

PDIC's construction flows from the standard industry meaning of the word "camera" to

persons skilled in the art and is congruent in scope with the patentee's amendment during

prosecution, which added the word "directly" to distinguish over prior art broadcast transmission

systems. D.I. 325 at 33-34. Defendants use this amendment to attempt to create a disavowal that

would limit the recited camera to a "standalone device" and a "physically separate device." In

doing so, Defendants ask the Court to both require the "video input" to be a separate element

from the "camera" and add another layer of separation by requiring that the camera be a

"physically separate" device. To read these limitations into the claim, Defendants must establish

that there was a clear and unmistakable disavowal by the patentee of claim scope in a manner

that limits the camera to a standalone, physically separate device. *Omega Eng., Inc. v. Raytek*

Corp., 334 F.3d 1314, 1325-26 (Fed. Cir. 2003). Defendants cannot meet this high burden.

Defendants isolate one sentence out of a multi-page response (where the patentee

explained the claim amendment *using examples* of how the claimed device *may* receive video

signals) and transform it into a "clear disclaimer" that requires the camera to be a standalone,

physically separate device.[10]   D.I. 323 at 7-8. Notably, the Office Action to which the patentee

was responding never discusses the "camera" in connection with the prior art and never asserts

that the location or physical separateness of the camera and the video input is an issue. *See* Ex.

C, '103 File History at June 22, 1988 Final Office Action. Indeed, the amendment had nothing

to do with physical separateness, but rather was "to more clearly distinguish over systems having

a video input at the receiver end of a transmission system which receives ***broadcast*** television

signals instead of receiving video signals 'directly' from a camera." D.I. 325 at Ex. 10 at 3

(emphasis added).   Thus, "directly" was added to specify that the video input receives the

analogue video signals over a ***non-broadcast*** transmission link from the camera and nothing

more. This amendment thus does not rise to the level of an unmistakable surrender of claim

scope that would justify limiting the camera to a standalone device.

Absent any clear disavowal of claim scope, Defendants are left with the plain language of

the claim and the specification, neither of which support their construction.   Nonetheless,

Defendants contend that the "standalone" limitation must be read into the claims because: (1) the

claim phrase states "a video input receiving…from a camera", (2) Figure 1 is described as being

"an apparatus according to the present invention, and (3) the only "camera disclosed in the patent

is a separate security system camera connected to the video coder." D.I. 323 at 6-7.

Addressing each point in turn, first, the claim language "receiving…from" does not

compel the conclusion that the camera is a "standalone" (or "physically separate") device.

Analogue video signals can be received by the video input (and thus such signals can be

transferred between the camera and the video input) regardless of whether the camera and video

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[10]Defendants statement "[*t*]*hroughout the prosecution history*, the applicant *consistently* refers to 'directly' as being from a camera output or otherwise receiving the camera output from a fixed transmission link" is misleading as the only statements made by the patentee regarding the word "directly" are in two paragraphs of one responsive paper. *See* D.I. 323 at 7; D.I. 325 at 33-34 (*citing* Ex. 10 at 3, 7).

input are "physically separate" or "standalone" or together. *See NTP, Inc. v. Research In Motion, Ltd.,* 418 F.3d 1282, 1309-1311 (Fed. Cir. 2005) (finding claim language requiring an "RF receiver ... *transfer*[] the originated information *to* the at least one of the plurality of destination processors," does not require that the RF receiver and destination processor are physically separate or separately housed because "the transfer of information can equally occur between two entities that are physically housed together.")

Second, the language used in 1:33-34 of the specification simply states that Fig. 1 is one embodiment "***according*** *to* the present invention" and does not constitute an "expression of manifest exclusion or restriction" that clearly disavows all other embodiments. *See Epistar Corp. v. Int'l Trade Comm'n,* 566 F.3d 1321, 1335 (Fed. Cir. 2009).[11]

Third, the specification citation relied on by Defendants simply states "***another*** application is in security systems, whereby the effective sensitivity of normal cameras is increased to cope with very poor ambient light levels to produce good quality pictures" and does not state anything about a "***separate*** security system camera." Moreover, this excerpt explicitly refers to only one possible embodiment. Ex. B at 3:33-36. There is no clear and unmistakable disavowal, and the Court should decline to import "standalone" into the claims.

Furthermore, Defendants' construction is unwarranted and violates tenets of claim construction by requiring the preamble to be limiting where (as here) the body of the claim describes a structurally complete invention. *Intirtool,* 369 F.3d at 1295. The term "video coder" simply describes one possible use of the invention. One skilled in the art would not understand that a video input can ***only*** be in a video coder. Moreover, Defendants construction introduces

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[11] Defendants omit the immediately preceding sentence in the specification which states *"[O]ne embodiment of the invention* will now be described …"* in an attempt to improperly limit the claims. 1:29-31. Figure 1 is plainly described as only one embodiment, and it is well-settled that limitations from described embodiments should not be imported into claims. *See Kara Tech., Inc. v. Stamps.com, Inc.,* 582 F.3d 1341, 1348 (Fed. Cir. 2009).

redundant and confusing limitations into the claims and improperly seeks to import examples of how the claimed video input *may* receive video signals as the *only* way in which the video input can receive such signals. D.I. 325 at 33-34. Defendants' construction should be rejected, and PDIC's construction should be adopted.

2.   The "control means" terms.—(JCCS Term 4 (Claim 1) and Term 10 (Claim 11))

a.   The "Control Means" Terms Are Not Means Plus Function Terms

These terms are not means-plus-function terms governed by 35 U.S.C. § 112, ¶ 6. The claim language, when viewed in the context of the specification, connotes sufficient structure to one skilled in the art to generate the control signal. D.I. 325 at 35-38, Ex. 12 at ¶¶ 13-19.

Defendants and Dr. Ebrahimi ignore the claims' structural limitations when they contend that "the claims recite *no* structure for performing the recited function." D.I. 323 at 9-10; *see also* Ebrahimi Decl. (D.I. 324) at ¶¶ 22-23 ("In my expert opinion, to a person of ordinary skill in the art, the 'control means' phrases in claim 1 and claim 11 do not recite *any* structure for performing the functions identified by the parties.") (emphasis supplied); Supp. Rhyne Decl. at ¶¶ 15-22. These positions are far off target and operate contrary to claim construction tenets in which *all* claim language is considered from the viewpoint of one skilled in the art to determine whether the claim recites "sufficient structure or material." Importantly, the claim language cannot be viewed in a vacuum, but must be considered in the context of the intrinsic evidence. *Id.*; *see also TI Grp. Automotive Sys., Inc. v. VDO N. Am., L.L.C.,* 375 F.3d 1126, 1135 (Fed. Cir. 2004); *Linear Tech. Corp. v. Impala Linear Corp.,* 379 F.3d 1311, 1320 (Fed. Cir. 2004).

Whether other courts have construed "control means" terms as being means-plus-function terms in claims in unrelated patents is of no moment. Claim construction is performed on a patent by patent, claim by claim and element by element basis. Courts have consistently held that phrases (even phrases written in classic means plus function form) are not means-plus-

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function terms if the claims recite sufficient structure to perform the recited function. *TI Grp.,* 375 F.3d at 1135; *Rodime PLC v. Seagate Tech., Inc.,* 174 F.3d 1294, 1303-04 (Fed. Cir. 1999); *Gemalto S.A. v. HTC Corp.,* 2012 U.S. Dist. LEXIS 89764, *64-72 (E.D. Tex. June 28, 2012); *Smith Eng. Co., Inc. v. Eisenmann Corp.,* 1999 U.S. Dist. LEXIS 23609, *10-16 (C.D. Cal. Jul. 22, 1999) ("flow control means…for providing" is ***not*** a means plus function limitation.)

The *Biomedino* case relied on by Defendants does not support their cause because the facts there were very different. In finding that the "control means" term there was indefinite, the Federal Circuit noted that neither the claims nor the specification recited or even suggested ***any*** structure for the "control means" term other than the modifier "control" preceding the term "means" (which in that specific context did not connote any structure to one skilled in the art in view of the rest of the claim language and the specification). *See Biomedino, LLC v. Waters Techs. Corp,* 490 F.3d 946, 949-953 (Fed. Cir. 2007).

In contrast to *Biomedino,* the word "control" in the "control means" terms does connote structure of a specialized controller to one skilled in the art in view of the rest of the claim language and the specification. D.I. 325 at 36-37, Ex. 12 at ¶ 15; Supp. Rhyne Decl. at ¶¶ 16-17. Specifically, unlike *Biomedino,* the claim language itself provides all the structure necessary to generate the control signal including (1) the particular input structure that receives digital words from the output of an analogue-to-digital converter, (2) the particular output structure that supplies an output for feedback application to the same converter, (3) a digital data processing structure, and (4) the complete algorithm to generate the control signal as a function of the average amplitude level represented by the digital words (claim 1) or as an arithmetic function of the digital words (claim 11). D.I. 325 at 36-38, Ex. 12 at ¶¶ 14-19; Supp. Rhyne Decl. at ¶¶ 15-22. Moreover, the skilled artisan in 1986 would know how to program such a processor (*e.g.* in a

"single-chip microcomputer") to execute the recited algorithm to derive the digital output to control the converter given this claimed structure and as the computational operations were well-known. D.I. 325 at 38, Ex. 12 at ¶¶ 17-19; Supp. Rhyne Decl. at ¶¶ 19-22.

b.   PDIC's Alternative Construction Identifies the Correct Structure and Function

Should the Court find that § 112, ¶ 6 does apply to the "control means" terms, PDIC's alternative construction identifies the correct structure and function. D.I. 325 at 39-42. On the other hand, Defendants, relying solely on Dr. Ebrahimi's testimony, contend that the corresponding structure of these terms ***must*** include ***all*** of the programmatic steps depicted in Fig. 3, and, in doing so, incorporate structure far beyond that which is ***necessary*** and clearly linked in the specification to perform the claimed function. D.I. 323 at 10-12; D.I. 324 at ¶¶ 24-29[12]; Supp. Rhyne Decl. at ¶¶ 24-38; D.I. 325 at 40-42 *citing Versa Corp. v. Ag-Bag International Ltd.,* 392 F.3d 1325, 1329 (Fed. Cir. 2004); *St. Clair Intellectual Prop. Consultants, Inc. v. Matsushita Elec. Indus. Co., Ltd.*, 691 F. Supp. 2d 538, 561 (D. Del. 2009) (limiting corresponding structure to only algorithm steps depicted in flow chart that were necessary to perform recited function).

Indeed, the entirety of Fig. 3 is neither clearly linked to, nor required to perform, the recited function for the "control means" terms. *Id.* Defendants and Dr. Ebrahimi have failed to recognize that the '103 Patent claims are arranged to allocate different portions of Fig. 3 to

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[12] Dr. Ebrahimi also appears to rely on portions of the '103 Patent describing the processing capabilities of a "typical system," and portions describing embodiments in which "irregular sampling" of the digital words is performed, in opining that the "entire algorithm" in Fig. 3 is "necessary." D.I. 324 at ¶¶ 25, 29. In doing so, he ignores: (1) that the '103 claims (like many other patents) recite broad independent claims (claims 1, 11) which require performance of only averaging operations on "previous said digital words" and narrower dependent claims which add limitations that address averaging only a subset of the total set of samples produced by the converter and (2) the explicit description that "irregular sampling of the digital values" is an exemplary embodiment ("***Preferably*** the controller employs an irregular subsampling of the digital values…") Ex. B at Abstract at lines 5-8; D.I. 325 at 40-42; Ex. Supp. Rhyne Decl. at ¶¶ 28, 37-39.

different claims.   Supp. Rhyne Decl. at ¶¶ 24-25; D.I. 325 at 41-42; Ex. B at 1:25-26 ("Other

optional features are defined in claims 2 to 9. . ."). These recited "optional features" are clearly

linked to separate programmatic steps of Fig. 3 and ***not*** to performing the claimed function of the

"control means" terms of claims 1 and 11.   *Id.*   For example, claim 5 addresses the optional

feature of step 6, claim 7 addresses the optional features of steps 16 and 18, claim 6 addresses the

optional feature of step 9, claim 4 addresses the optional feature of step 14, etc. *Id.*

Steps 12 and 13 are the only steps from Fig. 3 that are clearly linked to performance of

the recited function (to generate digitally a control signal "as a function of the average amplitude

level" or "as an arithmetic function of the amplitudes"). One skilled in the art would understand

that performance of these steps results in a digital value which identifies the average value of a

specific number of digital values. *See* D.I. 325 at 40-42; Supp. Rhyne Decl. at ¶¶ 18-22, 25-28,

31-36. Such a skilled person would understand that PDIC's identified structure and the claim

language itself (as detailed in Sec. II.B.2) discloses sufficient structure to perform the recited

function including a particular input and output structure, a digital data processing structure

(hard-wired digital "Application Specific Integrated Circuit" or programmed microprocessor),

and the complete algorithm to calculate an average value of the digital words to digitally

generate a feedback signal. *Id.; see also Typhoon Touch Techs., Inc. v. Dell, Inc.,* 659 F.3d 1376,

1383-1385 (Fed. Cir. 2011) (algorithmic structure can be described "in any understandable terms

including as a mathematical formula, in prose, or as a flow chart, or in any other manner that

provides sufficient structure" and the patent "need only disclose sufficient structure for a person

of skill in the art to provide an operative software program for the specified function").

3.   **"means for sampling selected words and for accumulating a sum of a predetermined
        number of the selected words and to apply…"** (JCCS Term 7 (Claim 3))

Contrary to Defendants' assertions, there is no ambiguity in this term when viewed in the context of the entire claim. D.I. 323 at 12-13; D.I. 325 at 42-43. The "to apply" language is not a separate function of the "means for sampling…and for accumulating" but rather introduces further structural limitations of the algorithm executed by the "control means"—*i.e.*, the controller also applies a correction to the control signal that is proportional to the difference between the accumulated sum and a reference value. *Id.*

Defendants' citation to *IPXL Holdings* is misdirected. Here, there is no uncertainty about when infringement would occur; it plainly occurs when a digital video coder is created including a control means programmed to execute the algorithm of claims 1 and 3. *Cf. IPXL Holdings,* 430 F.3d at 1384; *see also* Sec. II.A.15 *supra.*

Furthermore, Defendants' proposal for the corresponding structure of this claim limitation (*i.e.,* the **entirety** of the algorithm of Fig. 3) is flawed because, as discussed above in Sec. II.B.2(b) it improperly seeks to import structure well beyond that which is **necessary** to perform the claimed function. D.I. 325 at 43. PDIC identifies the correct structure and function.

4.   **"analogue-to-digital converter"—**(JCCS Term 2 (Claims 1, 11))

PDIC's construction is consistent with the term's ordinary meaning, which in turn is consistent with Applicant's definition provided in the intrinsic record. *See, e.g.* D.I. 325 at 43-44, Ex. 11 at 8 ("The present invention includes an analogue to digital converter that produces digital signals at its output in response to an input analogue video signal."); Ex. B at 1:40-41. Contrary to Defendants' assertions, PDIC's inclusion of "a **variable sensitivity** device" in its construction properly aligns this description of an analogue-to-digital converter with the remaining claim language which recites that the converter has a "control input *for varying the sensitivity of the converter." See ACTV, Inc. v. Walt Disney Co.,* 346 F.3d 1082, 1088 (Fed. Cir. 2003) (proper to consider the context of the surrounding words when construing a claim term.)

As detailed in Sec. II.B.1, Defendants' "ordinary meaning" construction violates tenets of claim construction as it transforms the preamble of the claims into a structural claim limitation. *Intirtool*, 369 F.3d at 1295. D.I. 325 at 44. PDIC's construction should be adopted.

5.   **"a control input for varying the sensitivity of the converter**"—(JCCS Term 3 (Claims 1, 11))

Defendants' construction should be rejected for at least three reasons. D.I. 325 at 44-45. First, to the extent it forecloses the use of intervening components between an output of the control means and the "control input" of the converter, Defendants' construction excludes the preferred embodiment described in Fig. 1. *Id.;* Sec. II.B.6 *infra*. Second, requiring a direct connection between the control means output and the control input of the converter introduces ambiguity into the claims because it conflicts with the claim language merely requiring the "control means…to generate digitally…a control signal *for application to* the control input of the converter." *Id.* Third, to the extent it requires that the control signal be a reference voltage, Defendants' construction improperly adds limitations that are not called for by the claim language (*e.g.*, "voltage of the input analog signal") and improperly attempts to import such limitations into the claim without any "clear and unmistakable disavowal of claim scope." *See* Secs. II.B.1, II.B.6.

PDIC's construction is consistent with, and supported by, the intrinsic and extrinsic records and the correct construction of analogue-to-digital converter in that the sensitivity of the converter is the relationship (in the process that produces digital words at the converter output in response to input analog signals) between those input analog signals and the corresponding output digital words that the converter produces. D.I. 325 at 43-44; *see* Sec. II.B.4 *supra*.

6.   **"a control signal for application to the control input of the converter**"—(JCCS Term 6 (Claims 1, 11))

PDIC again submits that this term does not require construction as the language of the

claim is clear and easily understood.   Defendants are correct that PDIC disagrees with their contentions that the "control signal *must be* a digital signal" and that such a digital signal must be "*applied to* the control input of the converter."   These limitations are not required by the claim language which requires only that the control signal be "*generate[d]* digitally," and they would exclude a preferred embodiment shown in Fig. 1 which illustrates that a control signal that is generated digitally is converted to analog form by "digital to analogue converter 16" prior to its application to the "converter 2." Ex. B at Fig. 1. Defendants' construction is incorrect.

7.   **"to omit from the sum of any of the selected words whose value is equal to that of a previous one of the selected words"—(JCCS Term 8 (Claim 5))** Defendants agreed to drop this term, but then included a substantive argument in their brief.[13] PDIC assumes that this action was an unintentional oversight by Defendants and not a litigation tactic.   However, as Defendants have brought the issue before the Court, the Court should adopt PDIC's construction as it is consistent with the specification and claim language and as it is provided to correct an obvious typographical error in the claim language by deleting an extra "of" that appears after "sum." *See* Ex. B at Fig. 3 at Step 6, 2:41; *Novo Indus., L.P. v. Micro Molds Corp.,* 350 F.3d 1348, 1354 (Fed. Cir. 2003) (describing conditions to make such a correction.) The Court can make such a correction in this case.[14] The Court should reject Defendants' construction which introduces ambiguity into the claim by eliminating the word "value" from the limitation and requiring that the comparison be of "a digital word" rather than the "value of a digital word."

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[13]Ex. D, E-mail from HP's counsel to PDIC's counsel. stating that: "Fujifilm and HP agree to drop Term 8 of the '103 patent (to omit from the sum)…"

[14] Original claim 5 recited "the control means is arranged to *omit from the sum any sample* whose value is equal…" The Patent Office suggested Applicant change "sample" to "of the selected words." Ex. E, '103 Patent File History Dec. 8, 1987 Action, at 3. In the course of making the suggested change, the Applicant erroneously added "of" prior to "any of the selected words." D.I. 325 at Ex. 11 at 3.

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CERTIFICATE OF SERVICE

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